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A PLAN TO PROVIDE AN OCCUPATIONAL RESEARCH CENTER AT COLORADO STATE UNIVERSITY.

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A RESEARCH COORDINATING UNIT IN THE FIELD OF OCCUPATIONAL RESEARCH WAS ESTABLISHED AT COLORADO STATE UNIVERSITY. THE UNIT WAS PRINCIPALLY CONCERNED WITH STIMULATION AND INITIATION OF VOCATIONAL EDUCATION RESEARCH. A STUDY OF THE POST-HIGH SCHOOL EXPERIENCES OF GRADUATES OF THE 1963 CLASS OF COLORADO SECONDARY SCHOOLS WAS COMPLETED. A STUDY OF OCCUPATIONS IN THE COLORADO ELECTRONICS INDUSTRY WAS ALSO CONDUCTED IN ORDER TO FORMULATE MORE INTELLIGENT DECISIONS ABOUT VOCATIONAL EDUCATION IN THAT AREA. SINCE THE UNIT WAS FUNDED FOR AN ADDITIONAL 19 MONTHS, IT WAS EXPECTED THAT ACTIVITIES WOULD BE EXPANDED TO PROVIDE A GREATER SERVICE TO VOCATIONAL EDUCATION RESEARCH IN COLORADO. (TC)

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FINAL REPORT

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January 1967

**U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE**

**Office of Education
Bureau of Research**

A Plan to Provide an Occupational Research Center At Colorado State University

Contract No. OE-5-85-125

Douglas Sjogren
David Sheppard

January 1965

The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

Colorado State University

Fort Collins, Colorado

The Research Coordinating Unit was established at Colorado State University on June 1, 1965, with a contract from the U.S. Office of Education for $109,000. The contract period was 18 months. The staff of the unit for the first year of operation consisted of Douglas Sjogren, director; David Sheppard, assistant director; Ralph Canada and C. Dean Miller, ¼ time research associates; five graduate assistants, and a secretary. On July 1, 1966, the staffing pattern of the unit was reorganized. Harold Anderson replaced Mr. Sjogren as director and a full-time person was employed in the State Board for Vocational Education offices to work with the Research Coordinating Unit. Mr. Sjogren resigned because of his need to devote more time to the direction of two other research projects for which he had received funding. On September 1, 1966, Mr. Anderson was appointed to a full-time teacher training position in the Department of Vocational Education at Colorado State University. On December 1, Mr. Sjogren reassumed his position as project director because of the limited time that Mr. Anderson could devote to it. Mr. Sjogren was able to do this because his research projects were well under way and required less time than when they were getting started. At the present time Mr. Sjogren is the project director and Mr. Sheppard is the assistant director. A full-time research person is also employed in the State Board, and he serves as an associate director of the project.

Although the official starting date of the project was June 1, 1965, work on the project did not really get started until the middle of July. The contract was not signed until about July, and we were not able to get a staff until into July. Consequently, the activities listed cover a period of 16½ months of work rather than 18 months.

Twelve activities were identified in the original proposal as the activities for the Research Coordinating Unit. Each activity is discussed below in terms of the efforts of the unit to fulfill the objective implied by the activity.

A. <u>The Unit Will Initiate Pertinent Vocational-Technical Research.</u>

In this regard the RCU conducted two studies that were felt to be important to vocational education in the state.

1. 1963 Colorado High School Graduates Follow-Up Study

The Research Coordinating Unit conducted a study of the post high school experiences of graduates of the 1963 Class of Colorado secondary schools. The study was an attempt to determine the occupational and educational needs of graduates entering the labor market in comparison to how well these needs were being met by educational facilities at the time of graduation, and how well the

student was prepared for the types of occupations he would actually enter when he left school.

The study began in September, 1965, and the second of two reports on the data was completed September, 1966. Most of the research work was done by the graduate assistants under the coordination of the RCU staff. The analysis of the data was broken into two parts. The first analysis was a general methology, general results, and a nonrespondents analysis. The second report contained a breakdown of the data by post high school activities and by the father's occupations of the graduates.

The 1963 class was chosen because it was felt that those graduates would have been out of school long enough to have established occupational or educational patterns, but not so long that they would be hard to locate. The total sample selected by a random procedure was 577. This represented a state-wide sample of the graduates.

The graduates were mailed a 5 page questionnaire and asked to complete and return it. A follow-up letter and another questionnaire were sent to those who didn't respond to the first request. From the total possible sample there were 67%, or 386 questionnaires returned. It was felt that this percent of return would be adequate for analysis purposes. From the 141 non-respondents a more intensive follow-up yielded 16 more returns which were compared with the original sample to determine the representative characteristics of the returned questionnaires.

Preliminary Analysis

The preliminary analysis of the data was centered around four main areas. The first of these was the demographic characteristics of the sample. This information included: 1) mobility of the sample, 2) age, sex, and marital status, 3) high school curriculum, and 4) present employment status.

The second area of analysis was work experiences and data included: 1) number of jobs held, 2) full and part-time nature of jobs held, 3) the industrial area in which employed, 4) occupational level of job, 5) length of time on job, and 6) reason for leaving job.

The next area of analysis was school experiences past high school, and this data included: 1) number of schools attended past high school, 2) type of school attended, 3) major area of study in school, 4) length of time in school, and 5) reasons for leaving school.

The last area of analysis in the preliminary report was interest in vocational education. This analysis included attitude questions concerning further education, attending a vocational school, and areas of work interest.

Additional Analysis

A second analysis of the follow-up data was conducted among

several different groups of graduates. One part of this analysis included a breakdown of the sample into four post high school activity groups: 1) those who went to a post high school and remained there, 2) those who went directly to work, 3) those who went to work and then to school, and 4) those who went to school and later to work.

The four groups of graduates were compared on their responses to the major areas: demographic characteristics, work experiences, school experiences, and vocational education interests.

Results and Evaluation of the Survey

The results of the study indicate that: 1) approximately one-half of the sample was employed at the time of the survey, 2) less than ¼ of the sample attended no schools after high school, 3) there was a tendency for the subjects to stay on a job for less than six months, and 4) the median number of jobs for the total sample was two jobs since leaving high school.

The study was one of the few attempts to investigate post high school activities of graduates on a state wide basis. The generalizations that were made were based on a relatively small sample with only a 67% return. However, it was felt that the data was valid enough to reveal some patterns of post high school experiences.

The need for such follow-up data has been noticed throughout the state in educational training, guidance, and other interest groups.

2. Colorado Electronics Industry Occupations Study

The RCU also conducted a study of occupations in the Colorado electronics industry in order to formulate more intelligent decisions about vocational education programs in this area. It was thought also that this study would provide a situation where the methodology for obtaining occupational data in other industries could be investigated. The Colorado electronics industry was selected for study because it is growing rapidly, and it appears to be a critical factor in the State's economy.

The study was begun in January, 1966, and the final report was completed August, 1966. Two industrial directories were used to determine all of the companies in Colorado engaged in electrical machinery manufacturing. This came to a total of 99 firms. These 99 firms were mailed a two part survey and asked to complete and return it. Eleven of the firms were found to be not involved in electrinics manufacturing and this left a total of 88 firms. From this new total of 88, 44%, or 39 firms decided to participate in the study by completing the survey instrument.

The first part of the survey was designed to elicit general information about the companies, and it included: 1) type of organization classified by its SIC code, 2) average annual employment by occupational groups according to the DOT, 3) the addition and elimination

of jobs by the firms in the past two years, 4) whether or not a formal training program is used, 5) means of recruiting new employees, and 6) gross dollar volume of the organization.

The second part of the survey was concerned with information about individual jobs within the companies, and it included: 1) education required, 2) starting and maximum wage rates, 3) recruitment difficulty, 4) whether or not a formal training program is used, 5) average age, 6) experience required, and 7) number employed 2 years ago and presently.

Results and Evaluation

Results of the two parts of the survey indicated several noteworthy points. These included: 1) most firms added jobs in the past two years indicating growth, 2) only a quarter of the sampled firms have any formal training programs, 3) there was a trade school designed for most jobs, and 4) the most difficult jobs to fill included machinists, mechanics, and technical writers. A high growth rate for the industry was projected by most companies.

The survey of occupations in the Colorado electronics industry was interpreted as not being very useful for assisting vocational education programs or for providing methodogy in conducting other studies of this type. The major shortcomings appeared to be the lack of response from industry and the inadequacy of detailed job information. It was felt that more effort must be placed in obtaining individual data from industry so that differences in job titles and job duties among different companies can be minimized. A more detailed procedure would likely yield a study with greater generalizability.

B. The Unit Will Provide Consultative Service to All Researchers Dealing With Vocational-Technical Proposals in Colorado.

The unit has provided consultative service to a number of individuals who were working on research, training, or program development proposals. The following list is of those with whom personnel in the unit have consulted regarding such proposals.

1. Jack Majors - Boulder Public Schools. The project was one of developing a guidance materials center in a junior high school. No proposal was submitted, rather they decided to develop the center on their own and conduct some evaluation of its use.
2. Duane Hill - Political Science Department, C.S.U. The proposal was to study attitudes held toward government employees and employment at differing levels of government. A proposal was submitted to the U.S. Office of Education. The action on the proposal by the U.S. Office was that Dr. Hill resubmit the proposal with some changes

3. Lewis Wall - College of Business, C.S.U.
Mr. Wall developed and submitted a proposal for evaluating the summer institutes for the training of data processing teachers. The institutes have been held at five institutions in the U.S. under Contract with the U.S. Office of Education. The proposal was funded.
4. Jefferson County Public Schools
Several meetings were held with staff members of the system to discuss a project being proposed by them under the Elementary and Secondary Act. These meetings included staff of the Unit and also members of staff in the Departments of Psychology, Education, and Vocational Education.
5. Earl Julson - Department of Vocational Education, C.S.U.
The staff of the RCU worked with Dr. Julson in his preparation of a proposal for a workshop for vocational agriculture teachers in teaching agricultural related occupations. The proposal was submitted and funded.
6. C.O. Neidt - Department of Psychology, C.S.U.
The unit staff has consulted with Dr. Neidt on several proposed projects. Proposals have been developed on an evaluation of guidance activities, fringe benefit studies, and occupational mobility. The proposals are pending.
7. John Flanagan - Department of Education, C.S.U.
Dr. Flanagan submitted a proposal for the teacher training program for teachers of disadvantaged youth. The staff of the unit assisted in the design of the evaluation phase of the program. The proposal, submitted to the U.S. Office of Education, was returned for resubmission.
8. Randall Nelson - Department of Education, C.S.U.
Dr. Nelson prepared a proposal for a fellowship program for the training of school counselors, and the unit staff assisted in the design. The proposal was not approved by the U.S. Office of Education.
9. Manuel Alers-Montalvo - Department of Sociology, C.S.U.
The unit staff has consulted with Dr. Alers-Montalvo on a proposal for a program to assist low income adolescents in the areas of occupational choice and citizenship responsibilities. The proposal is still in draft stage but will be submittedin the near future to the Office of Economic Opportunity.
10. Sociology Department - Colorado Women's College
Staff of this department are interested in studying factors related to the assumptin of dual role often being as a homemaker and as a worker or in a career. The unit staff consulted with them on the design of a project to study the problem.

11. David Sheppard - RCU

The RCU conducted a pilot study of the processes involved in choosing a vocation. The purpose of this study was to identify those variables related to vocational selection that could be accounted for developmentally.

Under the direction of a RCU staff member, unstructured interviews were set up at elementary, junior high, and senior high schools. The subject consisted of 10 boys and girls from each of the 6th, 9th, and 12th grades.

Letters requesting parental approval were sent so that a sample could be selected. In order to obtain the needed information, tape recorded interviews were conducted in the schools.

Results

The taped interviews were reviewed and a search of related literature was begun. It was felt that the reasons given by the students for selecting an occupation could be related to a model of motivation, such as that proposed by Maslow's theory of needs. Students in the lower grades would have a lower level of vocational development than students in the higher grades. A research proposal was developed and submitted to the U.S. Office of Education.

The proposal is now pending in Washington, but action is underway to begin some of the administrative work on the project.

Evaluation

We feel that the consultative efforts of the unit have been quite successful on the campus of Colorado State University. We have worked with a number of individuals on the campus by assisting with the design and the rationale for their projects.

The unit has not been as active in providing consultative services to agencies off of the campus. Perhaps the primary reason for the relatively small amount of consulting work off campus is that we have not provided enough publicity around the state that such service is available in the unit. A concentrated effort will be made in the next few months to insure that all agencies that might make use of the consultative service of the unit do know of this service.

C. The Unit will Serve A Coordinator Function of All Vocational-Technical Studies in Colorado and Other States.

Little emphasis has been accorded this activity by the unit. During the summer of 1966, a graduate student did develop a set of abstracts of studies in trade and technical education, and this has

been distributed around the state. The unit has also worked with personnel in the state office in Wyoming in the development of a research proposal. A third activity under this heading is that the director of the unit is also directing a research project on job clustering which is being performed cooperatively by the Department of Vocational Education, Colorado State University, and the Department of Agricultural Education, University of Nebraska.

Evaluation

This activity has been given a rather low priority by the unit. One reason for the low priority is that the activity seems to overlap somewhat with the objectives and functions of the ERIC project and the Regional Office of the U.S. Office of Education. We do need to establish a closer liason with the Regional office, however, so that we can be more aware than we now are of activities in the surrounding states that are relevant to our purposes.

D. The Unit Will Attempt to Stimulate and Encourage Occupational Research, Where Competent Researchers are Available, On the State Level, In Local School Districts, In Colleges and Universities, and in Other Non-Profit Institutions.

Effort on this activity has overlapped to a great extent with the efforts named in Activity "B" above. Much of the consultative work of the unit is a direct outgrowth of our attempts to stimulate and encourage occupational research. In addition to the efforts named under activity "B" the unit has done the following as stimulation efforts.

1. Staff of the Education, Business and Economics departments at the University of Colorado have been contacted and encouraged to consider studying problems of relevance to vocational education. The Educational Research Bureau at Colorado State College was visited for the same purpose.
2. Various school systems in the state have been visited by unit staff members and provided a description of the unit and of the research possibilities for local school agencies under the Vocational Education Act of 1963.
3. The unit staff has maintained contract with some persons in the State Board offices and assisted them in developing research ideas and programs.
4. Two seminars were held with the purpose of stimulating research in two areas; education of disadvantaged youth and vocational guidance. Selected individuals in the state were invited to the seminars. The seminars were structured so as to identify research questions that might be pursued in the two areas.

5. Clerical, interviewing, and data analysis assistance has been provided two professors as a means of enhancing their research effort.
6. Three professors served part time on the staff of the unit during the period of the contract. The purpose of the appointments was to provide the professors with time to develop their research ideas. One professor initiated and developed research on curricula for an agricultural related occupations program during the period. An economics professor developed a proposal, that is still in draft form, for studying mobility patterns of certain rural groups during the time with the project. The third professor, a psychologist, did not produce any tangible results during this time, but we are hopeful that he might develop a research program this year. He is no longer on the staff of the unit, but we are maintaining contact with him.
7. A survey of guidance programs in Colorado's secondary schools was initiated in September, 1966, and is still in process at this time. The RCU is providing assistance to the State Board for Vocational Education, which is sponsoring the study. The objective of the investigation is to provide a more realistic picture of the State's guidance program and especially the vocational guidance effort. The consultative assistance provided by the RCU has included: 1) instrument development and refinement; 2) selection of the sample; 3) mailing out the form; 4) collection and analysis of the data; and 5) search for relevant literature. The survey was mailed to all school districts superintendents and to all high school principles in the state. A follow-up form was mailed to those administrators who did not reply to the first send-out. As a result of these procedures, approximately 80% of the total possible sample has been returned.

E. <u>The Unit Will Provide Short Term Seminars For Selected Personnel Who Will Profit by Concentrated Review of Basic Research Techniques Including Statistical Methods of Handling Data, Appropriate Methods of Collecting Data, Methods of Determining Values of Data, and Methods of Analyzing Research Findings</u>.

This activity has been given the lowest priority of the list and no seminars such as this have been conducted. The director of the unit disagrees with the person who developed the proposal in the merits of such activity. The position of the director is that the topics suggested for the seminars cannot be treated effectively in short-term seminars and this knowledge is best acquired through formal work courses. The consultative service, mentioned under

Activity "B", is considered to be especially useful in providing the knowledge of research design for a potential project. We fell our time and the time of the potential researcher can be used more effectively and efficiently by the potential researcher's concentrating on the rationale and substance of his project with design and analysis help from us. This is in contrast to having the potential researcher attend seminars that cannot be comprehensive enough to develop any real competence in the design of research and the statistical treatment of data.

F. <u>The Unit Will Encourage Researchers to Investigate Problems With the Socio-Economically and Academically Deprived, in Terms of Assessing Their Abilities and Possible Training Needs</u>.

Four of the efforts of the unit describes in connection with other activities were also attempts to encourage research in this area. These efforts are reviewed again here.

1. A seminar was held on the C.S.U. campus for the purpose of identifying researchable problems in the area of socio-economically and academically deprived youth. The seminar participants were individuals from around the state who were identified as having an interest and unique knowledge in this area.
2. The unit worked closely with Dr. Flanagan of the Education Department at C.S.U. on his proposal for a project to train teachers for working with socio-economically and academically deprived youth.
3. A proposed project to assist low income adolescents in the areas of occupational choice and citizenship responsibilities, proposed by Dr. Alers-Montalvo of the Sociology Department of C.S.U., received assistance from the unit staff in the design of the project.
4. Mr. Sheppard of the unit staff submitted a proposal for studying career choice processes among low income youth. The proposal has received provisional approval.

G. <u>The Unit Will Make Avialable Skilled Research Consultative Service by Participating in the Review or Monitoring or Conducting, as Appropriate, of Occupational Research Projects Supported by Federal, State, Local or Private Organization Funds</u>.

This activity is very similar to activity "B" described above, and our efforts in this direction are described under activity "B".

H. The Unit Will Identify and Maintain an Inventory of Available Occupational Research and Development Resources in View of Anticipated Needs and Programs in the State of Colorado.

The unit has contacted those agencies that might be considered resources for research and development in occupational research. Among the agencies contacted are the Bureau of Business Research, University of Colorado; Educational Research Bureau, Colorado State College; Employment Security Office; State Department of Education; Colorado Employees Council; Colorado Commission for Economic Development; University of Denver Research Institute; and Colorado Apprenticeship Council; and the State Chamber of Commerce.

Evaluation

Although contacts have been made with these agencies, the unit has not established an effective on-going liason with most of the agencies. We do intend to work to establish better liason in the future through the full-time staff member in the State Board offices who will have responsibility for such liason.

I. The Unit will Work Closely with the Colorado Employment Service, The Denver Office of the U.S. Department of Labor, and the Regional Office of Health, Education, and Welfare, to Continually Assess the Employment Opportunities, Emerging Occupational Trends, and Future Job Projections.

Our efforts in this activity closely parallel our efforts under activity "H". The unit has worked closely with the Employment Service and Department of Labor in gathering and interpreting data relevant to the occupational structure in Colorado. Partly as a result of the units efforts, meetings have been held of representatives of agencies in the state that are interested in and collecting occupational data. The purpose of these meetings has been to attempt to coordinate such data gathering efforts so that there will be less duplication of effort and increased emphasis on gathering data so that they are comparable from one study to another.

Evaluation

We feel our efforts on this activity have been rewarding and useful. Although coordination of the data gathering and reporting has not yet been achieved, we believe that continued effort by the unit will facilitate a coordinated effort by the agencies. The unit staff believes that the State Employment Service should be the central agency for coordinating and reporting occupational data. Hopefully our coordination attempts will be of infludence in the Employment Services assumption of this responsibility.

J. The Unit Will Be Actively Engaged in Identifying Issues and Problems Relating to the Nature and Place of Vocational-Technical Education in Colorado.

The seminars described under activity "E" above were also efforts in this activity. Beside the seminars the unit has talked with vocational educators at the University, State, and local level in an attempt to identify the issues and problems. We often encounter difficulty in identifying researchable issues and problems in that the issues are often presented as value judgments with a high affective content. Our job then is to define the evidence that would be useful in deciding on the value question and design the project to gather the evidence.

Evaluation

We have not been as successful as we would like to be in carrying out the activity. We feel it is important that we increase our contracts with the local districts and the State Supervisors in order to be more effective in this activity area. The full time staff member in the state office should allow for this contact.

The director of the unit is also considering another activity in this area, that of trying to educate persons to the purposes and reasonable outcomes of research. It is felt that many persons expect research to be able to prove a point of view rather than gather evidence on objectively stated questions. Research cannot prove that counselors should put more people into vocational curricula. Research can study questions such as the relationship between student characteristics, curricular choice, and subsequent outcomes. Perhaps an educational program to define research would help to identify researchable issues and problems.

K. The Unit Will Provide Consultative Service to School Districts By Assisting in Comprehensive Surveys Designed to Determine the Needs for Vocational-Technical Education for Both School Age Youth and Adults. Such Requests Will be Made Through the Office of the Executive Director for Vocational Education in Denver.

The RCU participated in the construction of survey instruments and procedures for determining the feasibility of establishing an area vocational school in seven Northeastern Colorado counties. The project was begun in October, 1965, and a final report of the survey was submitted July, 1966. A Steering Committee was selected to direct the survey, and the RCU was chosen to construct the instruments and develop the procedures for administering the survey.

Funds for the survey were elicted from several school districts in the seven county area, and these funds were matched with State monies to provide over $5,000 to conduct the study. A survey director was employed by the Steering Committee, and he worked closely with a representative of the RCU while administering the survey.

Methodology

The State Board for Vocational Education set forth several guidelines as a basis for its consideration of applications for establishing an area vocational school. These guidelines included: 1) a comprehensive vocational program which includes a minimum of 15 courses in at least 5 occupational areas; 2) a minimum school population of 225 students, and 3) evidence of adequate facilities and personnel to conduct the outlined programs.

With these guidelines in mind the RCU developed a series of instrument forms necessary to conduct a survey. These survey instruments were designed to gather data in the following areas:

1) School characteristics
2) Financial characteristics
3) Population characteristics
4) Occupational needs
5) Residential support and interest

In order to obtain data in the 5 major areas the following survey instruments were constructed:

Local Community Survey

This survey was established to gather information on facilities in 16 cities in the area. Data was collected on transportation routes, medical facilities, recreation, and housing.

High School Students Interest Survey

This survey was designed to indicate the post-high school plans of 9th, 10th, 11th, and 12th grade boys and girls in the area. A total of 235 responded to the questionnaire. Information was collected on post-high school plans, expected residence, and interests in specific occupations.

Farm Survey

This survey was constructed to tabulate farm related jobs in the area. A total of 404 farm operators completed the survey. The questionnaire covered areas such as: type of operation, length of time farming, future plans for the farm, and number of persons working on the farm.

Business and Industry Survey

This instrument was designed to obtain occupational information from the local businesses in the area. The total number of businesses that responded to the form was 203. Data was obtained on the type of product, number employed, number added and to which jobs, and education and training requirements for the jobs.

Adult Interest Survey

This survey was given to adults in the local communities to

determine their interests in an area vocational school. A total of 196 forms were completed. The analyzed data included: plans for children after high school, interest in additional training, and attitudes toward vocational education.

1963 High School Graduates Survey

This survey was designed to examine the post high school activities of the 1963 graduates in the area. Over 147 graduates were included in the survey. Information was obtained on demographic data, work experiences, additional schooling, and vocational interests.

Results and Evaluation of the Survey

A final report of the survey along with constructed tables was written by the Survey Director. This report was then submitted to the Steering Committee.

The RCU staff thought that the final report was not comprehensive enough to submit to the State Board for Vocational Education. It was felt that the report did not completely address itself to the requirements outlined by the State Board. The Steering Committee was notified of this concern, and of this date there has been no action taken on the report.

It was thought that this experience did provide some meaningful guidelines for conducting future surveys of this type.

L. The Unit Will Be Continually Engaged in Disseminating Information on the Progress, Findings, and Applications of the Results of Occupational Education Research to all Cooperating Units and Agencies in the State and the Vocational Division of the U.S. Office of Education.

As a part of the dissemination activity of the RCU an annotated bibliography related to current research in trade and industrial education was compiled. This summary of research activity was assembled with the hope that the information it contained would be of use and interest to the vocational educator in his local situation and to the research oriented individual.

The review was compiled during the period June to August, 1966. It contains research studies and articles of interest that were related to the increased emphasis on vocational preparation and improvement. The annotations were written so that they could convey to the reader the general purposes of the studies, as well as the major results and conclusions.

The studies were divided into four major areas of interest; 1) experimental and comparative studies; 2) the student, or several aspects concerning the student; 3) studies involving the staffing problems in vocational education; and 4) those studies that are of general interest to vocational education.

Evaluation

It was hoped that the annotated bibliography would serve a useful purpose in providing current research topics to those persons interested in experimental activities. However, on completing the review, several shortcomings were noted. One of these was the lack of continuity in the review. A central problem or theme was needed to draw together the studies that were reported. Related research could then be fitted into a general structure around a central topic.

Other Dissemination Activities

This review, the two follow-up reports, and the electronics occupations report were mailed and given to all those individuals interested in their results. The reports were mailed to vocational educators, vocational administrators, businesses, labor personnel, general educators, and to the other RCU's around the nation. The results of this dissemination activity, has been noted by the requests that have been received for additional reports. Requests for the reports have been received from many parts of the State and from other states as well.

The dissemination activity of the Unit appears to have had some degree of success in getting the information into the hands of those who are interested in vocational-technical research.

Summary of the Report

In terms of the twelve activities identified in the original proposal for the RCU, most of the objectives have been met. The unit has been concerned mostly with stimulation and initiation of vocational education research. The two major studies conducted by the Unit, as well as the consultative help it has given to other projects has typified the RCU's activity during the eighteen months funding period.

Since the Unit has been funded for an additional nineteen months, it is expected that the activities of the RCU will be expanded to provide a greater service to vocational education research in Colorado.